

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): S. Brandon Keller, et al.

Confirmation No.:

Application No.: 10/647,597

Examiner: Not Assigned

Filing Date: Aug. 25, 2003

Group Art Unit:

Title: SYSTEM AND METHOD FOR DETERMINING WIRE CAPACITANCE FOR VLSI CIRCUIT

Commissioner for Patents

PO Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

This Information Disclosure Statement is submitted:

(X) under 37 CFR 1.97(b), or
(Within three months of filing national application; or date of entry of national application; or before mailing date of first office action on the merits; whichever occurs last)

() under 37 CFR 1.97(c) together with either a:
() Statement under 37 CFR 1.97(e), or
() a \$180.00 fee under 37 CFR 1.17(p), or
(After the CFR 1.97 (b) time period, but before final action or notice of allowance, whichever occurs first)

() under 37 CFR 1.97 (d) together with a:
() Statement under 37 CFR 1.97(e)(1) or (2), and
() a \$180.00 fee set forth in 37 CFR 1.17(p).
(Filed after final action, a notice of allowance, on or before payment of the issue fee)

Please charge to Deposit Account 08-2025 the sum of \$0.00. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account 08-2025 pursuant to 37 CFR 1.25.

(X) Applicant(s) submit herewith Form PTO 1449 - Information Disclosure Statement together with any required copies of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56.

() A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO Form 1449, as presently understood by the individual(s) designated in 37 CFR 1.56 (c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on form PTO 1449 and is enclosed herewith.

It is requested that the information disclosed herein be made of record in this application.

"Express Mail" label no. **EV210654949US**

Date of Deposit Feb. 6, 2004

I hereby certify that this is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, Alexandria, VA 22313-1450.

By Wendy Precht

Typed Name: **Wendy Precht**

Respectfully submitted,

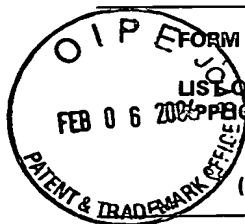
S. Brandon Keller, et al.

By Peter C. Knops

Peter C. Knops
Attorney/Agent for Applicant(s)
Reg. No. **37,659**

Date: **Feb. 6, 2004**

Telephone No.: **(816) 460-5826**



| | | |
|---|--------------------------------------|------------------|
| ATTY. DOCKET NO. 100111221-1 | APPLICATION NO. 10/647,597 | CONFIRMATION NO. |
| APPLICANT S. Brandon Keller, et al. | | |
| FILING DATE Aug. 25, 2003 | GROUP | |

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | PUBLICATION DATE | NAME | Pages, Columns, Lines Where Relevant Passages or Figures Appear |
|------------------|-----------------|------------------|------|---|
| 1A | | | | |
| 1B | | | | |
| 1C | | | | |
| 1D | | | | |
| 1E | | | | |
| 1F | | | | |
| 1G | | | | |
| 1H | | | | |
| 1I | | | | |
| 1J | | | | |
| 1K | | | | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | PUBLICATION DATE | NAME OF PATENTEE OR APPLICANT | Pages/Columns/Lines Where Relevant Passages/Figures Appear | Check if Translation attached |
|--|----|-----------------|------------------|-------------------------------|--|-------------------------------|
| | 1L | | | | | |
| | 1M | | | | | |
| | 1N | | | | | |
| | 1O | | | | | |
| | 1P | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | |
|----|--|
| 1Q | KELLER, S. Brandon; ROGERS, Dennis R.; LELM, Charles A.; U.S. Patent Application Serial Number 10/706,682, Entitled: Method And Program Product For Determining Nets Requiring Detailed Electromigration And Self Heating Analysis In A Digital Integrated Circuit; Filed November 12, 2003 |
| 1R | KELLER, S. Brandon; ROGERS, Dennis R.; LELM, Charles A.; U.S. Patent Application Serial Number 10/706,698, Entitled: Method And Program Product For Performing Self-Heating Analysis In A Digital Integrated Circuit Through A Single Cycle Transient Simulation; Filed November 12, 2003 |
| 1S | KELLER, S. Brandon; ROGERS, Dennis R.; LELM, Charles A.; U.S. Patent Application Serial Number 10/706,376, Entitled: Method And Program For Visual Display and One-Click Repair Of Electromigration And Self Heating Design-Rule Violations In A Digital Integrated Circuit Layout Database; Filed November 12, 2003 |

EXAMINER

DATE CONSIDERED



FORM PTO-1449

LIST OF PATENTS AND PUBLICATIONS FOR
APPLICANT'S INFORMATION DISCLOSURE
STATEMENT

FEB 06 2004

CO

(Use several sheets if necessary)

| | | |
|---------------------------|-----------------|------------------|
| ATTY. DOCKET NO. | APPLICATION NO. | CONFIRMATION NO. |
| 100111221-1 | 10/647,597 | |
| APPLICANT | | |
| S. Brandon Keller, et al. | | |
| FILING DATE | GROUP | |
| Aug. 25, 2003 | | |

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | PUBLICATION DATE | NAME | Pages, Columns, Lines Where Relevant Passages or Figures Appear |
|------------------|-----------------|------------------|------|---|
| 2A | | | | |
| 2B | | | | |
| 2C | | | | |
| 2D | | | | |
| 2E | | | | |
| 2F | | | | |
| 2G | | | | |
| 2H | | | | |
| 2I | | | | |
| 2J | | | | |
| 2K | | | | |

FOREIGN PATENT DOCUMENTS

| | DOCUMENT NUMBER | PUBLICATION DATE | NAME OF PATENTEE OR APPLICANT | Pages/Columns/Lines Where Relevant Passages/Figures Appear | Check if Translation attached |
|----|-----------------|------------------|-------------------------------|--|-------------------------------|
| 2L | | | | | |
| 2M | | | | | |
| 2N | | | | | |
| 2O | | | | | |
| 2P | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | |
|----|--|
| 2Q | KELLER, S. Brandon; ROGERS, Dennis R.; LELM, Charles A.; U.S. Patent Application Serial Number 10/706,501, Entitled: Method And Program Product For Performing Electromigration Analysis In A Digital Integrated Circuit By Converting A Netlist To A DC Model And Performing DC Analysis Of The DC Model; Filed November 12, 2003 |
| 2R | KELLER, S. Brandon; ROGERS, Dennis R.; LELM, Charles A.; U.S. Patent Application Serial Number 10/706,526, Entitled: Method And Program Product For Performing A Worst Case Electromigration And Self Heating Analysis In A Digital Integrated Circuit With Worst-Case Superposition Of Partial Currents; Filed November 12, 2003 |
| 2S | KELLER, S. Brandon; ROGERS, Dennis R.; LELM, Charles A.; U.S. Patent Application Serial Number 10/706,692, Entitled: Method And Program Product For Performing Electromigration Analysis In A Digital Integrated Circuit Through A Single Cycle Transient Simulation; Filed November 12, 2003 |

EXAMINER

DATE CONSIDERED

| | | | |
|---|--|---|------------------|
| FORM PTO-1449 | ATTY. DOCKET NO. 100111221-1 | APPLICATION NO. 10/647,597 | CONFIRMATION NO. |
| O 1 LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT | | APPLICANT S. Brandon Keller, et al. | |
| FEB 06 2004 (Use several sheets if necessary) | | FILING DATE Aug. 25, 2003 | GROUP |

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | PUBLICATION DATE | NAME | Pages, Columns, Lines Where Relevant Passages or Figures Appear |
|---------------------|--------------------|---------------------|------|--|
| 3A | | | | |
| 3B | | | | |
| 3C | | | | |
| 3D | | | | |
| 3E | | | | |
| 3F | | | | |
| 3G | | | | |
| 3H | | | | |
| 3I | | | | |
| 3J | | | | |
| 3K | | | | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | PUBLICATION DATE | NAME OF PATENTEE OR APPLICANT | Pages/Columns/Lines Where Relevant Passages/Figures Appear | Check if Translation attached |
|--|--|-----------------|------------------|-------------------------------|--|-------------------------------|
| | | 3L | | | | |
| | | 3M | | | | |
| | | 3N | | | | |
| | | 3O | | | | |
| | | 3P | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | |
|----|--|
| 3Q | <p>KELLER, S. Brandon; ROGERS, Dennis R.; LELM, Charles A.; U.S. Patent Application Serial Number 10/706,508, Entitled: Method And Program Product For Performing Self-Heating Analysis In A Digital Integrated Circuit Layout Database by Substituting Resistive Models For Active Devices; Filed November 12, 2003</p> |
| 3R | <p>KELLER, S. Brandon; ROGERS, Dennis R.; ROBBERTS, George H.; U.S. Patent Application filed under EV210655516US; Entitled: Method And Program Product For Determining Worst Case Currents In A Digital Integrated Circuit Through Worst-Case Superposition Of Partial Currents; Docket No.: 200300123-1; Filed January 30, 2004</p> |
| 3S | <p>KELLER, S. Brandon; ROGERS, Dennis R.; ROBBERTS, George H.; U.S. Patent Application filed under EV210655564US; Docket: 200308901-1; Entitled: Systems And Methods For Re-Using Circuit Design Analysis Results; Filed January 30, 2004</p> |

EXAMINER

DATE CONSIDERED

| | | | |
|---|---------------------------------|-------------------------------|------------------|
| FORM PTO-1449 LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT FEB 06 2004 (Use several sheets if necessary) | ATTY. DOCKET NO. 100111221-1 | APPLICATION NO. 10/647,597 | CONFIRMATION NO. |
| APPLICANT S. Brandon Keller, et al. | | FILING DATE Aug. 25, 2003 | |
| GROUP | | | |

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | PUBLICATION DATE | NAME | Pages, Columns, Lines Where Relevant Passages or Figures Appear |
|------------------|-----------------|------------------|------|---|
| 4A | | | | |
| 4B | | | | |
| 4C | | | | |
| 4D | | | | |
| 4E | | | | |
| 4F | | | | |
| 4G | | | | |
| 4H | | | | |
| 4I | | | | |
| 4J | | | | |
| 4K | | | | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | PUBLICATION DATE | NAME OF PATENTEE OR APPLICANT | Pages/Columns/Lines Where Relevant Passages/Figures Appear | Check if Translation attached |
|--|----|-----------------|------------------|-------------------------------|--|-------------------------------|
| | 4L | | | | | |
| | 4M | | | | | |
| | 4N | | | | | |
| | 4O | | | | | |
| | 4P | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | |
|----|--|
| 4Q | KELLER, S. Brandon; ROGERS, Dennis R.; ROBBERTS, George H.; U.S. Patent Application filed under EV210655581US; Docket No.: 200308899-1; Entitled: System And Method For Determining Detail Of Analysis In A Circuit Design; Filed January 30, 2004 |
| 4R | KELLER, S. Brandon; ROGERS, Dennis R.; ROBBERTS, George H.; U.S. Patent Application filed under EV210655595US; Docket No.: 200308898-1; Entitled: Systems And Methods That Identify Equivalent Instantiation-Specific Configuration Information For Analysis Tools; Filed January 30, 2004 |
| 4S | KELLER, S. Brandon; ROGERS, Dennis R.; ROBBERTS, George H. & STEVENS, Scott Alan; U.S. Patent Application filed under EV210655520US; Entitled: System And Method To Limit Analyzed Current Flow In A Circuit Design; Filed January 30, 2004 |

EXAMINER

DATE CONSIDERED

FORM PTO-1449

ATTY. DOCKET NO.

100111221-1

APPLICATION NO.

10/647,597

CONFIRMATION NO.

LIST OF PATENTS AND PUBLICATIONS FOR
APPLICANT'S INFORMATION DISCLOSURE
STATEMENT

FEB 06 2004 (Use several sheets if necessary)

APPLICANT

S. Brandon Keller, et al.

FILING DATE

Aug. 25, 2003

GROUP

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | PUBLICATION DATE | NAME | Pages, Columns, Lines Where Relevant Passages or Figures Appear |
|------------------|-----------------|------------------|------|---|
| 5A | | | | |
| 5B | | | | |
| 5C | | | | |
| 5D | | | | |
| 5E | | | | |
| 5F | | | | |
| 5G | | | | |
| 5H | | | | |
| 5I | | | | |
| 5J | | | | |
| 5K | | | | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | PUBLICATION DATE | NAME OF PATENTEE OR APPLICANT | Pages/Columns/Lines Where Relevant Passages/Figures Appear | Check if Translation attached |
|--|----|-----------------|------------------|-------------------------------|--|-------------------------------|
| | 5L | | | | | |
| | 5M | | | | | |
| | 5N | | | | | |
| | 5O | | | | | |
| | 5P | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | |
|----|--|
| 5Q | KELLER, S. Brandon; ROGERS, Dennis R.; ROBBERTS, George H.; U.S. Patent Application filed under EV210655533US; Docket: 200310172-1; Entitled: System And Method For Processing Configuration Information; Filed January 30, 2004 |
| 5R | KELLER, S. Brandon; ROGERS, Dennis R.; ROBBERTS, George H.; U.S. Patent Application filed under EV210655555US; Docket: 200310170-1; Entitled: System And Method For Balancing Run-Time And Result Accuracy In A Circuit Design Analysis Tool; Filed January 30, 2004 |
| 5S | KELLER, S. Brandon; ROGERS, Dennis R.; ROBBERTS, George H.; U.S. Patent Application filed under EV210655578US; Docket: 200308900-1; Entitled: System And Method For Indicating Logic State Combinations Used During Circuit Design Analysis; Filed January 30, 2004 |

EXAMINER

DATE CONSIDERED

| | | | | |
|--|--|---|--------------------------------------|------------------|
| FORM PTO-1449 O LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT FEB 06 2004 (Use several sheets if necessary) | | ATTY. DOCKET NO. 100111221-1 | APPLICATION NO. 10/647,597 | CONFIRMATION NO. |
| | | APPLICANT S. Brandon Keller, et al. | | |
| | | FILING DATE Aug. 25, 2003 | GROUP | |

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | PUBLICATION DATE | NAME | Pages, Columns, Lines Where Relevant Passages or Figures Appear |
|------------------|-----------------|------------------|------|---|
| 6A | | | | |
| 6B | | | | |
| 6C | | | | |
| 6D | | | | |
| 6E | | | | |
| 6F | | | | |
| 6G | | | | |
| 6H | | | | |
| 6I | | | | |
| 6J | | | | |
| 6K | | | | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | PUBLICATION DATE | NAME OF PATENTEE OR APPLICANT | Pages/Columns/Lines Where Relevant Passages/Figures Appear | Check if Translation attached |
|--|----|-----------------|------------------|-------------------------------|--|-------------------------------|
| | 6L | | | | | |
| | 6M | | | | | |
| | 6N | | | | | |
| | 6O | | | | | |
| | 6P | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | |
|----|--|
| 6Q | KELLER, S. Brandon; ROGERS, Dennis R.; ROBBERTS, George H.; U.S. Patent Application filed under EV210655547US; Docket: 200310171-1; Entitled: System And Method For Determining Control Signal Combinations For Use During Simulation Of A Stage Of A Circuit Design; Filed January 30, 2004 |
| 6R | |
| 6S | |

EXAMINER

DATE CONSIDERED